A → 22421
B → 56109
C → 94997
D → 92021
E → 89018
F → 52112
G → 119930
H → 16606
I → 47979
J → 65788
K → 115034

base Network :
100.0.0.0

Order		Network	Range	Broadcast	Subnet mask
G	/15	100.0.0.0	100.0.0.1 — 100.1.255.254	100.1.255.255	255.254.0.0
K	/15	100.2.0.0	100.2.0.1 — 100.3.255.254	100.3.255.255	255.254.0.0
C	/15	100.4.0.0	100.4.0.1 — 100.5.255.254	100.5.255.255	255.254.0.0
D	/15	100.6.0.0	100.6.0.1 — 100.7.255.254	100.7.255.255	255.254.0.0
E	/15	100.8.0.0	100.8.0.1 — 100.9.255.254	100.9.255.255	255.254.0.0
J	/15	100.10.0.0	100.10.0.1 — 100.11.255.254	100.11.255.255	255.254.0.0
B	/16	100.12.0.0	100.12.0.1 — 100.12.255.254	100.12.255.255	255.255.0.0
F	/16	100.13.0.0	100.13.0.1 — 100.13.255.254	100.13.255.255	255.255.0.0
I	/16	100.14.0.0	100.14.0.1 — 100.14.255.254	100.14.255.255	255.255.0.0
A	/17	100.15.0.0	100.15.0.1 — 100.15.127.254	100.15.127.255	255.255.128.0
H	/17	100.15.128.0	100.15.128.1 — 100.15.255.254	100.15.255.255	255.255.128.0
	/30	100.16.0.0	10.16.0.1 — 100.16.0.2	100.16.0.3	255.255.255.252

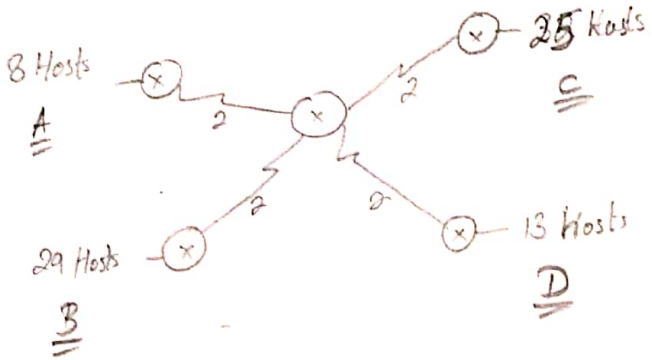
for a network using 2 ip addresses

$\log_2(x) = y$

$32 - y = \_\_$

* y=17 255.254.0.0
y=16 255.255.0.0
y=15 255.255.128.0

Let there be 8 networks



Step 1 : select the most no. of Hosts

in our case its 29

Step 2 : select nearest block size to can accomodate 29 hosts

Step 3 : subnetting

2	4	8	16	32	64	128
			↑ for network D, A	↑ selected block for 29 hosts		

Network		Hosts	Broadcast
192.168.1.0	B	192.168.1.1 – 192.168.1.30	255.255.255.31
192.168.1.32	C	192.168.1.33 – 192.168.1.62	255.255.255.63
192.168.1.64	D	192.168.1.65 – 192.168.1.78	255.255.255.79
192.168.1.80	A	192.168.1.81 – 192.168.94	255.255.255.95
192.168.1.96		192.168.1.97 – 192.168.98	255.255.255.99
.100		192.168.1.101 – 192.168.102	255.255.255.103

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384	32768	65536	131072	262144	524288	1048576	2097152
																↑C				

A → 86494
B → 92648
C → 100663
D → 33839
E → 55245
F → 68930
G → 29293
H → 9704
I → 66279
J → 39561
K → 89534

Order: C B K A F I E J D G H

Network → 60.1.0.0

Network		Range	Broadcast	Subnet mask
60.0.0.0	C	60.0.0.1 – 60.1.255.254	60.1.255.255	255.254.0.0 /15
60.2.0.0	B	60.2.0.1 – 60.3.255.254	60.3.255.255	255.254.0.0 /15
60.4.0.0	K	60.4.0.1 – 60.5.255.254	60.5.255.255	255.254.0.0 /15
60.6.0.0	A	60.6.0.1 – 60.7.255.254	60.7.255.255	255.254.0.0 /15
60.8.0.0	F	60.8.0.1 – 60.9.255.254	60.9.255.255	255.254.0.0 /15
60.10.0.0	I	60.10.0.1 – 60.11.255.254	60.11.255.255	255.254.0.0 /15
60.12.0.0	E	60.12.0.1 – 60.12.255.254	60.12.255.255	255.255.0.0 /16
60.13.0.0	J	60.13.0.1 – 60.13.255.254	60.13.255.255	255.255.0.0 /16
60.14.0.0	D	60.14.0.1 – 60.14.255.254	60.14.255.255	255.255.0.0 /16
60.15.0.0	G	60.15.0.1 – 60.15.127.254	60.15.127.255	255.255.128.0 /17
60.15.128.0	H	60.15.128.1 – 60.15.191.254	60.15.191.255	255.255.192.0 /18
60.15.192.0				

Important !

1 1 1 1 1 1 1 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0

Network is divided into subnetworks

Subnetting

Why do we need it

Let Hosts be → 10
→ 49
→ 72
→ 110
→ 149
→ 172
→ 11149
→ 11172
→ 19119117

Task !

Consider a network : 192.168.1.0

usable hosts → 254

• if we divide it into 2 subnets

Then 254/2 →

192.168.1.0000000

192.168.1.0 — 192.168.1.127

192.168.1.1000000

192.168.1.128 — 192.168.1.255

Consider 8 bits

128 1 0 0 0 0 0 0 0